

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- 1 1. (Currently amended) A method for managing access to a resource, the method comprising the computer-implemented steps of:
2 sending, from a requestor to a master of the resource, a lock mode request for a
3 lock mode on the resource;
4 receiving the resource at the requestor from a holder of the resource, wherein the
5 holder of the resource is separate and distinct from the master of the
6 resource, and wherein the holder is a process that currently holds rights to
7 access the resource by virtue of a lock mode, on the resource, that was
8 previously granted to the holder by the master of the resource; and
9 accessing the resource as if the requestor had been granted the lock mode without
10 waiting to receive an express lock mode grant from the master.
- 1 2. (Previously presented) The method of Claim 1, further comprising the computer-implemented steps of:
2 detecting that the step of receiving the resource at the requestor has occurred; and
3 sending a lock assume message, from the requestor to the master, to inform the
4 master that the requestor has assumed the lock mode relative to the
5 resource.
- 1 3. (Previously presented) A method for managing access to a resource, the method comprising the computer-implemented steps of:
2 receiving, at a holder, an inform lock holder message that a requestor needs the
3 resource, where the holder currently holds the resource and a first lock
4 mode on the resource;
5 transferring the resource to the requestor in response to receiving the inform lock
6 holder message without sending a status message to a master of the
7

8 resource wherein the status message is a down-convert message or a
9 release lock message; and
10 updating a lock mode record, maintained by the holder, to indicate that the holder
11 has down-converted from the first lock mode to a second lock mode for
12 the resource.

1 4. (Previously presented) The method of Claim 3, further comprising the computer-
2 implemented step of:
3 sending an update lock message to the master, wherein the update lock message
4 indicates the second lock mode for the resource.

1 5. (Previously presented) The method of Claim 3, further comprising the computer-
2 implemented steps of:
3 receiving, at the holder, a message from a sender, wherein the message includes a
4 third lock mode on the resource;
5 detecting that the first lock mode and the third lock mode do not match; and
6 sending a lock status message to the sender, wherein the lock status message
7 includes the first lock mode.

1 6. (Previously presented) The method of Claim 3, further comprising the computer-
2 implemented steps of:
3 receiving, at the holder, a single batched inform lock holder message that contains
4 all information necessary to transfer the resource to a plurality of
5 requestors; and
6 transferring the resource to the plurality of requestors.

1 7. (Previously presented) The method of Claim 3, further comprising the computer-
2 implemented step of:
3 sending a lock access message from the holder to a master.

1 8. (Previously presented) A method for managing access to a resource, the method

2 comprising the computer-implemented steps of:
3 receiving, at a master, a request message which indicates that a requestor needs a
4 particular resource of a plurality of resources, where the master maintains
5 a plurality of lock mode records corresponding to the plurality of
6 resources;
7 sending, from the master to a holder, an inform lock holder message to indicate to
8 the holder that the requestor needs the particular resource and to identify
9 the requestor to the holder to allow the holder to send the particular
10 resource directly to the requestor;
11 receiving a lock access message from the requestor where the lock access message
12 indicates that the requestor has assumed a lock mode relative to the
13 particular resource; and
14 performing an update to a particular lock mode record of the plurality of lock
15 mode records in response to receiving the lock access message, wherein
16 the update indicates that the requestor has assumed the lock mode on the
17 particular resource.

1 9. (Previously presented) The method of Claim 8, wherein the computer-
2 implemented step of performing an update to a particular lock mode record of the
3 plurality of lock mode records in response to receiving the plurality of lock mode
4 records in response to receiving the lock access message is performed prior to
5 receiving any status message from the holder relating to the particular resource,
6 and wherein the status message is a down-convert message or a release lock
7 message.

1 10. (Previously presented) The method of Claim 8, wherein the computer-
2 implemented step of performing an update to a particular lock mode record of the
3 plurality of lock mode records in response to receiving the plurality of lock mode
4 records in response to receiving the lock access message is performed without
5 receiving the status message from the holder relating to the particular resource,
6 and wherein the status message is a down-convert message or a release lock

7 message.

1 11. (Previously presented) The method of Claim 8, further comprising the computer-
2 implemented steps of:
3 receiving, at the master, a plurality of request messages which indicate that a
4 plurality of requestors need the particular resource; and
5 sending from the master to the holder the inform lock holder message, wherein the
6 inform lock holder message contains all information from the plurality of
7 request messages that is necessary for the holder to transfer the particular
8 resource to the plurality of requestors.

1 12. (Previously presented) The method of Claim 8, further comprising the computer-
2 implemented steps of:
3 receiving, at the master, a message from a sender, wherein the message includes a
4 second lock mode on the particular resource;
5 detecting that the lock mode and the second lock mode do not match; and
6 sending a lock status message to the sender, wherein the lock status message
7 includes the lock mode.

1 13. (Previously presented) The method of Claim 8, further comprising the computer-
2 implemented steps of:
3 receiving, at the master, a second request message, wherein the request message
4 and the second request message both contain requests for the resource in
5 exclusive lock mode; and
6 queuing the second request message until the master receives the lock access
7 message from the requestor.

1 14. (Previously presented) A method for managing access to a resource, the method
2 comprising the computer-implemented steps of:
3 receiving, at a master, a request message which indicates that a requestor needs a
4 particular resource of a plurality of resources, where the master maintains

5 a plurality of lock mode records corresponding to the plurality of
6 resources;
7 designating one holder out of a plurality of holders wherein the plurality of
8 holders all have respective lock modes for the particular resource;
9 sending a plurality of broadcast inform lock holder messages, to the plurality of
10 holders except for the one holder, indicating that the requestor needs the
11 particular resource;
12 receiving a plurality of update lock messages from the plurality of holders except
13 for the one holder, wherein the plurality of update lock messages indicates
14 the respective lock modes of the plurality of holders;
15 sending, from the master to the one holder, an inform lock holder message to
16 indicate to the one holder that the requestor needs the particular resource;
17 receiving a lock access message from the requestor where the lock access message
18 indicates that the requestor has assumed a lock mode relative to the
19 particular resource; and
20 performing an update to a particular lock mode record of the plurality of lock
21 mode records in response to receiving the lock access message without the
22 master receiving a status message from the one holder, wherein the status
23 message is a down-convert message or a release lock message, and
24 wherein the update indicates that the requestor has assumed the lock mode
25 on the particular resource.

1 15. (Currently amended) A computer system, comprising:
2 a processor;
3 a computer-readable medium storing instructions of the computer system which,
4 when executed by the processor, cause the processor to perform the computer-
5 implemented steps of:
6 sending, from a requestor to a master of a resource, a lock mode request for the
7 lock mode on the resource;
8 receiving the resource at the requestor from a holder of the resource, wherein the
9 holder of the resource is separate and distinct from the master of the

10 resource, and wherein the holder is a process that currently holds rights to
11 access the resource by virtue of a lock mode, on the resource, that was
12 previously granted to the holder by the master of the resource; and
13 accessing the resource as if the requestor had been granted the lock mode without
14 waiting to receive an express lock mode grant from the master.

1 16. (Previously presented) The computer system of Claim 15, wherein the computer-
2 implemented steps further comprise the computer-implemented steps of:
3 detecting that the step of receiving the resource at the requestor has occurred; and
4 sending a lock assume message from the requestor to the master to inform the
5 master that the requestor has assumed the lock mode relative to the
6 resource.

1 17. (Previously presented) A computer system, comprising:
2 a processor;
3 a computer-readable medium, coupled to the processor, containing:
4 a particular lock mode record of a plurality of lock mode records
5 corresponding to a lock mode of a particular resource of a plurality
6 of resources, where a master maintains the plurality of lock mode
7 records corresponding to the plurality of resources, wherein the
8 computer-readable medium stores instructions of the computer
9 system which, when executed by the processor, cause the processor
10 to perform the computer-implemented steps of:
11 receiving, at the master, a request message which indicates that a
12 requestor needs the particular resource of the plurality of
13 resources, where the master maintains the plurality of lock
14 mode records corresponding to the plurality of resources;
15 sending, from the master to a holder, an inform lock holder
16 message to indicate to the holder that the requestor needs
17 the particular resource and to identify the requestor to the
18 holder to allow the holder to send the particular resource

- 1 18. (Previously presented) The computer system of Claim 17, wherein the computer-
2 implemented step of performing an update to a particular lock mode record of the
3 plurality of lock mode records in response to receiving the lock access message is
4 performed prior to receiving any status message from the holder relating to the
5 particular resource, and wherein the status message is a down-convert message or
6 a release lock message.
 - 1 19. (Previously presented) The computer system of Claim 17, wherein the computer-
2 implemented step of performing an update to a particular lock mode record of the
3 plurality of lock mode records in response to receiving the plurality of lock mode
4 records in response to receiving the lock access message is performed without
5 receiving the status message from the holder relating to the particular resource,
6 and wherein the status message is a down-convert message or a release lock
7 message.
 - 1 20. (Previously presented) The computer system of Claim 17, wherein computer-
2 implemented steps further comprise the computer-implemented steps of:
3 receiving, at the master, a plurality of request messages which indicate that a
4 plurality of requestors need the particular resource; and
5 sending, from the master to the holder, the inform lock holder message, wherein

6 the inform lock holder message contains all information from the plurality
7 of request messages that is necessary for the holder to transfer the
8 particular resource to the plurality of requestors.

1 21. (Previously presented) The computer system of Claim 17, wherein the computer-
2 implemented steps further comprise the computer-implemented steps of:
3 receiving, at the master, a message from a sender, wherein the message includes a
4 second lock mode on the particular resource;
5 detecting that the lock mode and the second lock mode do not match; and
6 sending a lock status message to the sender, wherein the lock status message
7 includes the lock mode.

1 22. (Previously presented) The computer system of Claim 17, wherein the computer-
2 implemented steps further comprise the computer- implemented steps of:
3 receiving, at the master, a second request message wherein the request message
4 and the second request message both contain requests for the resource in
5 exclusive lock mode; and
6 queuing the second request message until the master receives the lock access
7 message from the requestor.

1 23. (Previously presented) A computer system, comprising:
2 a processor;
3 a computer-readable medium, coupled to the processor, containing:
4 a particular lock mode record of a plurality of lock mode records
5 corresponding to a lock mode of a particular resource of a plurality
6 of resources, where a master maintains the plurality of lock mode
7 records corresponding to the plurality of resources, wherein the
8 computer-readable medium stores instructions of the computer
9 system which, when executed by the processor, cause the processor
10 to perform the computer-implemented steps of:
11 receiving, at a master, a request message which indicates that a

12 requestor needs the particular resource of the plurality of
13 resources, where the master maintains the plurality of lock
14 mode records corresponding to the plurality of resources;
15 designating one holder out of a plurality of holders wherein the
16 plurality of holders all have respective lock modes for the
17 particular resource;
18 sending a plurality of broadcast inform lock holder messages, to
19 the plurality of holders except for the one holder, indicating
20 that the requestor needs the particular resource;
21 receiving a plurality of update lock messages from the plurality of
22 holders except for the one holder, wherein the plurality of
23 update lock messages indicates the respective lock modes
24 of the plurality of holders;
25 sending, from the master to the one holder, an inform lock holder
26 message to indicate to the one holder that the requestor
27 needs the particular resource;
28 receiving a lock access message from the requestor where the lock
29 access message indicates that the requestor has assumed the
30 lock mode relative to the particular resource; and
31 performing an update to the particular lock mode record of the
32 plurality of lock mode records in response to receiving the
33 lock access message without the master receiving a status
34 message from the one holder,
35 wherein the status message is a down-convert message or a release
36 lock message, and
37 wherein the update indicates that the requestor has assumed the
38 lock mode on the particular resource.

- 1 24. (Previously presented) A computer system, comprising:
2 a processor;
3 a computer-readable medium, coupled to the processor, containing:

4 a resource and a first lock mode on the resource; and
5 a lock mode record associated with the resource, wherein the computer-
6 readable medium stores instructions of the computer system which,
7 when executed by the processor, cause the processor to perform the
8 computer-implemented steps of:
9 receiving, at a holder, an inform lock holder message that a
10 requestor needs the resource, wherein the holder currently
11 holds the resource and the first lock mode on the resource;
12 transferring the resource to the requestor in response to receiving
13 the inform lock holder message without sending a status
14 message to a master of the resource wherein the status
15 message is a down-convert message or a release lock
16 message; and
17 updating the lock mode record, maintained by the holder, to
18 indicate that the holder has down-converted from the first
19 lock mode to a second lock mode for the resource.

1 25. (Previously presented) The computer system of Claim 24, wherein the computer-
2 implemented steps further comprise the computer-implemented step of:
3 sending an update lock message to the master, wherein the update lock message
4 indicates the second lock mode for the resource.

1 26. (Previously presented) The computer system of Claim 24, wherein the computer-
2 implemented steps further comprise the computer-implemented steps of:
3 receiving, at the holder, a message from a sender, wherein the message includes a
4 third lock mode on the resource;
5 detecting that the first lock mode and the third lock mode do not match; and
6 sending a lock status message to the sender, wherein the lock status message
7 includes the first lock mode.

1 27. (Previously presented) The computer system of Claim 24 wherein the computer-

2 implemented steps further comprise the computer-implemented steps of:
3 receiving, at the holder, a single batched inform lock holder message that contains
4 all information necessary to transfer the resource to a plurality of
5 requestors; and
6 transferring the resource to the plurality of requestors.

1 28. (Currently amended) A computer-readable medium carrying one or more
2 sequences of instructions for managing access to a resource, wherein execution of
3 the one or more sequences of instructions by one or more processors causes the
4 one or more processors to perform the steps of:
5 sending, from a requestor to a master of the resource, a lock mode request for a
6 lock mode on the resource;
7 receiving the resource at the requestor from a holder of the resource, wherein the
8 holder of the resource is separate and distinct from the master of the
9 resource, and wherein the holder is a process that currently holds rights to
10 access the resource by virtue of a lock mode, on the resource, that was
11 previously granted to the holder by the master of the resource; and
12 accessing the resource as if the requestor had been granted the lock mode request
13 without waiting to receive an express lock mode grant from the master.

1 29. (Previously presented) The computer-readable medium of Claim 28, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 detecting that the step of receiving the resource at the requestor has occurred; and
5 sending a lock assume message from the requestor to the master to inform the
6 master that the requestor has assumed the lock mode relative to the
7 resource.

1 30. (Previously presented) A computer-readable medium carrying one or more
2 sequences of instructions for managing access to a resource, wherein execution of
3 the one or more sequences of instructions by one or more processors causes the

4 one or more processors to perform the steps of:
5 receiving, at a holder, an inform lock holder message that a requestor needs the
6 resource, where the holder currently holds the resource and a first lock
7 mode on the resource;
8 transferring the resource to the requestor in response to receiving the inform lock
9 holder message without sending a status message to a master of the
10 resource wherein the status message is a down-convert message or a
11 release lock message; and
12 updating a lock mode record, maintained by the holder, to indicate that the holder
13 has down-converted from the first lock mode to a second lock mode for
14 the resource.

1 31. (Previously presented) The computer-readable medium of Claim 30, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the step of:
4 sending an update lock message to the master, wherein the update lock message
5 indicates the second lock mode for the resource.

1 32. (Previously presented) The computer-readable medium of Claim 30, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 receiving, at the holder, a message from a sender, wherein the message includes a
5 third lock mode on the resource;
6 detecting that the first lock mode and the third lock mode do not match; and
7 sending a lock status message to the sender, wherein the lock status message
8 includes the first lock mode.

1 33. (Previously presented) The computer-readable medium of Claim 30, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 receiving, at the holder, a single batched inform lock holder message that contains

5 all information necessary to transfer the resource to a plurality of
6 requestors; and
7 transferring the resource to the plurality of requestors.

1 34. (Previously presented) The method for Claim 30, wherein execution of the one or
2 more sequences of instructions by the one or more processors causes the one or
3 more processors to further perform the step of:
4 sending a lock access message from the holder to a master.

1 35. (Previously presented) A computer-readable medium carrying one or more
2 sequences of instructions for managing access to a resource, wherein execution of
3 the one or more sequences of instructions by one or more processors causes the
4 one or more processors to perform the steps of:
5 receiving, at a master, a request message which indicates that a requestor needs a
6 particular resource of a plurality of resources, wherein the master
7 maintains a plurality of lock mode records corresponding to the plurality
8 of resources;
9 sending, from the master to a holder, an inform lock holder message to indicate to
10 the holder that the requestor needs the particular resource and to identify
11 the requestor to the holder to allow the holder to send the particular
12 resource directly to the requestor;
13 receiving a lock access message from the requestor where the lock access message
14 indicates that the requestor has assumed a lock mode relative to the
15 particular resource; and
16 performing an update to a particular lock mode record of the plurality of lock
17 mode records in response to receiving the lock access message, wherein
18 the update indicates that the requestor has assumed the lock mode on the
19 particular resource.

1 36. (Previously presented) The computer-readable medium of Claim 35, wherein the
2 step of performing an update to a particular lock mode record of the plurality of

3 lock mode records in response to receiving the lock access message is performed
4 prior to receiving any status message from the holder relating to the particular
5 resource, and wherein the status message is a down-convert
6 message or a release lock message.

1 37. (Previously presented) The computer-readable medium of Claim 35, wherein the
2 step of performing an update to a particular lock mode record of the plurality of
3 lock mode records in response to receiving the plurality of lock mode records in
4 response to receiving the lock access message is performed without receiving the
5 status message from the holder relating to the particular resource, and wherein the
6 status message is a down-convert message or a release lock message.

1 38. (Previously presented) The computer-readable medium of Claim 35, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 receiving, at the master, a plurality of request messages which indicate that a
5 plurality of requestors need the particular resource; and
6 sending, from the master to the holder, the inform lock holder message, wherein
7 the inform lock holder message contains all information from the plurality
8 of request messages that is necessary for the holder to transfer the
9 particular resource to the plurality of requestors.

1 39. (Previously presented) The computer-readable medium of Claim 35, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 receiving, at the master, a message from a sender, wherein the message includes a
5 second lock mode on the particular resource;
6 detecting that the lock mode and the second lock mode do not match; and
7 sending a lock status message to the sender, wherein the lock status message
8 includes the lock mode.

- 1 40. (Previously presented) The computer-readable medium of Claim 35, wherein
2 execution of the one or more sequences of instructions by the one or more
3 processors causes the one or more processors to further perform the steps of:
4 receiving, at the master, a second request message, wherein the request message
5 and the second request message both contain requests for the resource in
6 exclusive lock mode; and
7 queuing the second request message until the master receives the lock access
8 message from the requestor.
- 1 41. (Previously presented) A computer-readable medium carrying one or more
2 sequences of instructions for managing access to a resource, wherein execution of
3 the one or more sequences of instructions by one or more processors causes the
4 one or more processors to perform the steps of:
5 receiving, at a master, a request message which indicates that a requestor needs a
6 particular resource of a plurality of resources, where the master maintains
7 a plurality of lock mode records corresponding to the plurality of
8 resources;
9 designating one holder out of a plurality of holders wherein the plurality of
10 holders all have respective lock modes for the particular resource;
11 sending a plurality of broadcast inform lock holder messages, to the plurality of
12 holders except for the one holder, indicating that the requestor needs the
13 particular resource;
14 receiving a plurality of update lock messages from the plurality of holders except
15 for the one holder,
16 wherein the plurality of update lock messages indicates the respective lock modes
17 of the plurality of holders;
18 sending, from the master to the one holder, an inform lock holder message to
19 indicate to the one holder that the requestor needs the particular resource;
20 receiving a lock access message from the requestor where the lock access message
21 indicates that the requestor has assumed a lock mode relative to the
22 particular resource; and

23 performing an update to a particular lock mode record of the plurality of lock
24 mode records in response to receiving the lock access message without the
25 master receiving a status message from the one holder,
26 wherein the status message is a down-convert message or a release lock message,
27 and
28 wherein the update indicates that the requestor has assumed the lock mode on the
29 particular resource.

1 42. (Cancelled).

1 43. (Cancelled).